

CRINUM MACOWANII.

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(With Plates XIII to XVI)

Crinum macowanii Bkr. emend; *C. macowani* Bkr. in Gard. Chron. 9: 298 (1878) et in Bot. Mag. sub. t. 6381 (1878) pro parte.

Lectotype: MacOwan 2122 (K).

Bulbus ovoideus vel sub-globosus, 6—18 cm. diam., in collum plus minusve distinctum 11—29 cm. longum attenuatus. *Folia* c. 17, e collo breve, usque 18 cm. longo, enata, viridula, nonnunquam glauca, patentia, arcuata, longitudine plicata, usque 80 cm. longa, plerumque 4—9 cm. lata, marginibus plus minusve undulatis, pilis cartilaginosis sparse ciliatis. *Inflorescentia* usque 90 cm. alta. *Pedunculus* viridulus parce glaucus, robustus, sub-compressus, usque 70 cm. longus, 2.7 cm. latus, 1.7 cm. crassus. *Umbella* cum 10—25 floris. *Bracteae* involucrates 2, plus minusve deltoideae, base 5.5 cm. latae, usque 10 cm. longae; bracteae inter floribus nonnullae, lineares, c. 10 cm. longae. *Pedicelli* breves vel usque 4 cm. longi, germen 2 cm. longum. *Perianthii* tubus viridis vel subfuscus, curvatus, c. 10 cm. longus; lobi saepe albidii, late roseo-carinati, c. 10 cm. longi, exteriores 2.5 cm. lati, interiores 3 cm. lati, semper formam campanulatam conniventes apicem versus recurvi; cacumen viride, apex reflexus minute calcariformis. *Filamenta* albida; antherae atrae. *Capsula* falcata.

CAPE. Noman's Land, south-western frontiers of Natal, *MacOwan* 2122, lectotype (K); near Butterworth, *MacOwan* 508 (GRA, BOL).

NATAL. Pietermaritzburg, *Dyer* 4869; Lower Tugela; Umhlali, *Meuse* 9658.

TRANSVAAL. Pilgrimsrest: 17 m. S.W. Pilgrimsrest, *Codd & Verdoorn* 7603; Sabie, *Codd* 5652. Lydenburg: 4 m. S. of Lydenburg *Codd & Verdoorn* 7619.

In the Gardener's Chronicle 1878, when drawing up the description of *Crinum macowanii* (written "Macowani") Baker confused two entities. He intended describing the species represented by the specimen MacOwan 2122, but believing it to be the same as two plants flowering at Kew, his description was based mainly on these living plants. In the Botanical

Magazine of the same year, on plate 6381, under the name *C. macowanii* is a painting of one of these living plants and it is obviously *C. moorei* Hook. f., a species quite distinct from that represented by MacOwan's specimen.

This error, we now learn, was noted by William Watson of Kew in 1900, and more recently by Mrs. Isaac of the Bolus Herbarium but to the best of my knowledge, nothing has been published on the subject.

The specimen MacOwan 2122 came originally from "Noman's Land" the south-western frontier of Natal. Unfortunately attempts to rediscover it in this particular area have so far failed, but certain specimens from Pietermaritzburg and Umhlali in Natal and the Pilgrimsrest and Lydenburg districts in the Transvaal are an excellent match of MacOwan 2122 (K) and MacOwan 508 (GRA, BOL). (The latter specimen, from near Butterworth, MacOwan himself identified as being the same species as 2122.) The amended description given above is therefore based only on these eastern examples although the name is applied to a much wider range of specimens. The reason for not citing all the specimens is because the broad view includes some forms which future workers may consider worthy of varietal rank. Descriptions of the forms and the reasons for considering them as normal variants of a single entity are given below.

In the broad view of the species the distribution extends from Komgha in the eastern Cape, northwards through Natal and the Orange Free State to the Transvaal where it occurs quite extensively. The accompanying distribution map shows the districts in South Africa in which specimens have so far been collected. An intensive survey might prove that it occurs in some other areas as well.

The species is characterised by the following features: *Leaves* cedar green or glaucous, longitudinally folded to form a trough, arcuate spreading from a short stem-like column, usually broadly truncate (the apex easily dying off), but if intact, long and acuminate to the apex, fairly sparsely ciliate and undulate on the margin; perianth tube 5—12 cm. long, lobes large, more or less 10—25 cm. long and 2.5—3 cm. broad, conniving in a campanulate shape with only the apical portion recurved at maturity, white or pale pink, always with a broad rose-pink dorsal keel or band; anthers black; fruit with part of the perianth persisting as a beak.

The typical form is usually found near streams or in vleis. It has an inflorescence up to 90 cm. tall and the leaves are usually green not glaucous. (Plates xiii and xiv.)

A form found in the eastern Cape, although with a fairly tall inflorescence, often as tall as the typical form, has the leaves usually glaucous and the length of the pedicel and perianth tube varying considerably.



PLATE XIII.

Fig. 1 Typical form, watercourse, Pteromantziang, Natal.

Fig. 2 Typical form, originally from Umhlah, Natal (cultivated at Pretoria).



PLATE XIV.

Fig. 1 Typical form at stream side, Sabie, Transvaal.

Fig. 2—Typical form near stream, south of Lydenburg, Transvaal.



PLATE XV.

Fig. 1—Form with glaucous leaves and shorter perianth tube; grassland, Komgha, Cape.

Fig. 2—Low plant with glaucous leaves and perianth segments tinged pink with a deeper rose pink keel; growing in dolerite outcrop, Estecourt, Natal.

Fig. 3, 4—Plants medium height, leaves glaucous; growing in grassveld, Doornkloof, Irene. Fig. 3 was taken on a cool rainy day and Fig. 4 in the heat of a sunny day.



PLATE XVI.

Fig. 1—Low plant, glaucous leaves; in grassveld 6 miles S.W. of Lydenburg (note flowers drooping in hot sun).

Fig. 2—Low plant, glaucous leaves; in rocky grassveld 15 miles S.W. of Lydenburg. (Note beaked fruits on right hand from neighbouring plant).

Fig. 3—Low plant, glaucous leaves; in grassveld east of Pretoria.

Fig. 4—Low plant, glaucous leaves; originally from Marico, Western Transvaal (cultivated at Pretoria).

Some of these specimens have the pedicels up to 5 cm. long, as opposed to from about 1—3 cm. long, and the perianth tube only 5 cm. long as opposed to about 9 cm. This is the case in the plant on Plate xv, Fig. 1, but it is not clear since the position of the ovary is not easily seen. (Plate xv, Fig. 1.)

From a dolerite outcrop near Estcourt is recorded a form which appears very distinct having glaucous leaves, a short peduncle and the flowers more pink than white as the dorsal keel is broad and a very deep colour and the rest of the segment is tinted with pink. (Plate xv, Fig. 2.)



Distribution records of *Crinum macowanii* Bkr. emend. (sensu lato).

These differences may seem very significant when one compares such plants with the typical form, but over the wide range of its distribution intermediate stages can be found in all these features. The leaf colour seems to depend on the soil for in the drier regions and when near stones or rocks the leaves are distinctly glaucous, while in rich moist soil they are cedar green. This was clearly illustrated in the Lydenburg district when a special investigation of the *Crinums* of that region was made.

For some miles to the south west of Lydenburg in red sandy loam on gentle rocky slopes there were hundreds of plants of this *Crinum* growing. They were all low plants with glaucous leaves. (Plate xvi, Figs. 1 and 2.) Not far from these, beside a stream, grew the specimen which has been included in the typical form having a tall inflorescence and green leaves. (Plate xiv, Fig. 2.)

Many plants similar to the last mentioned, that is the more or less typical form, were found in vlei ground north of Lydenburg, and on some slopes intermediate forms were seen. While the habitat seems to influence the colour of the leaves and average length of the peduncle it has not yet been established if the deeper colour of the flowers in some plants, such as those at Estcourt, is connected with the conditions under which they grow, but it is unlikely that a difference in colour intensity can be considered of taxonomic value.

In the central and western Transvaal the specimens collected have been mostly the form with a short peduncle and glaucous leaves. Such plants grow around Pretoria (Plate xvi, Fig. 3) and at Groot Marico, the most westerly record to date (Plate xvi, Fig. 4). Near Warmbaths in the Waterberg district and at Irene a form has been seen that is of medium height and the leaves usually sub-glaucous. These intermediate specimens support the view that the plants are best treated as a taxon varying within specific limits.

Photographs of the plants at Irene illustrate an interesting feature that has been observed repeatedly (Plate xv, Figs. 3 and 4). The photograph of Plate xv, Fig. 3 was taken on a cool rainy day and it will be observed that in this photo a number of the open flowers are spreading. In Plate xv, Fig. 4 taken on a hot sunny day all the open flowers are drooping. Without knowing the reason this difference in the appearance of the flowers might be considered to be a distinguishing feature for a form or variety.

The following key distinguishes *C. macowanii* in the broad application of the name from *C. moorei* Hook. f. with which Baker confused it, and two closely related species in the Transvaal *C. bulbispermum* (Burm. f.) Milne Redhead & Schweickerdt and *C. graminicola* Verdoorn.

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| Perianth segments white or pink, not banded dorsally, sub-spreading at maturity; inflorescence up to 6 ft. tall; leaves more or less flat, shortly narrowing to base and apex | <i>C. moorei</i> |
| Perianth segments with a distinct dorsal rose coloured keel (banded), conniving in a campanulate or funnel shape with only the apical portion recurving at maturity; inflorescence up to 3 ft. tall; leaves usually broadly truncate, the apical portion dying off easily, if intact then long and tapering to the apex: | |

Leaves more or less flat, never glaucous, spreading at ground level; peduncle always short

C. graminicola

Leaves arcuate spreading from a short or long stem-like column, peduncle usually over 1 ft. tall if short then leaves glaucous:

Stem-like column of clasping leaf bases usually over 1 ft. tall; leaves always glaucous, several narrow ones in the centre; perianth funnel-shaped; anthers white to fuscus, not black; fruit not beaked

C. bulbispermum

Stem-like column usually under 1 ft. tall; leaves green if glaucous plants small, only 1 or 2 narrow leaves in centre; perianth campanulate; anthers black; fruit beaked

C. macowanii